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PATENT & TRADEMARK OFFICE



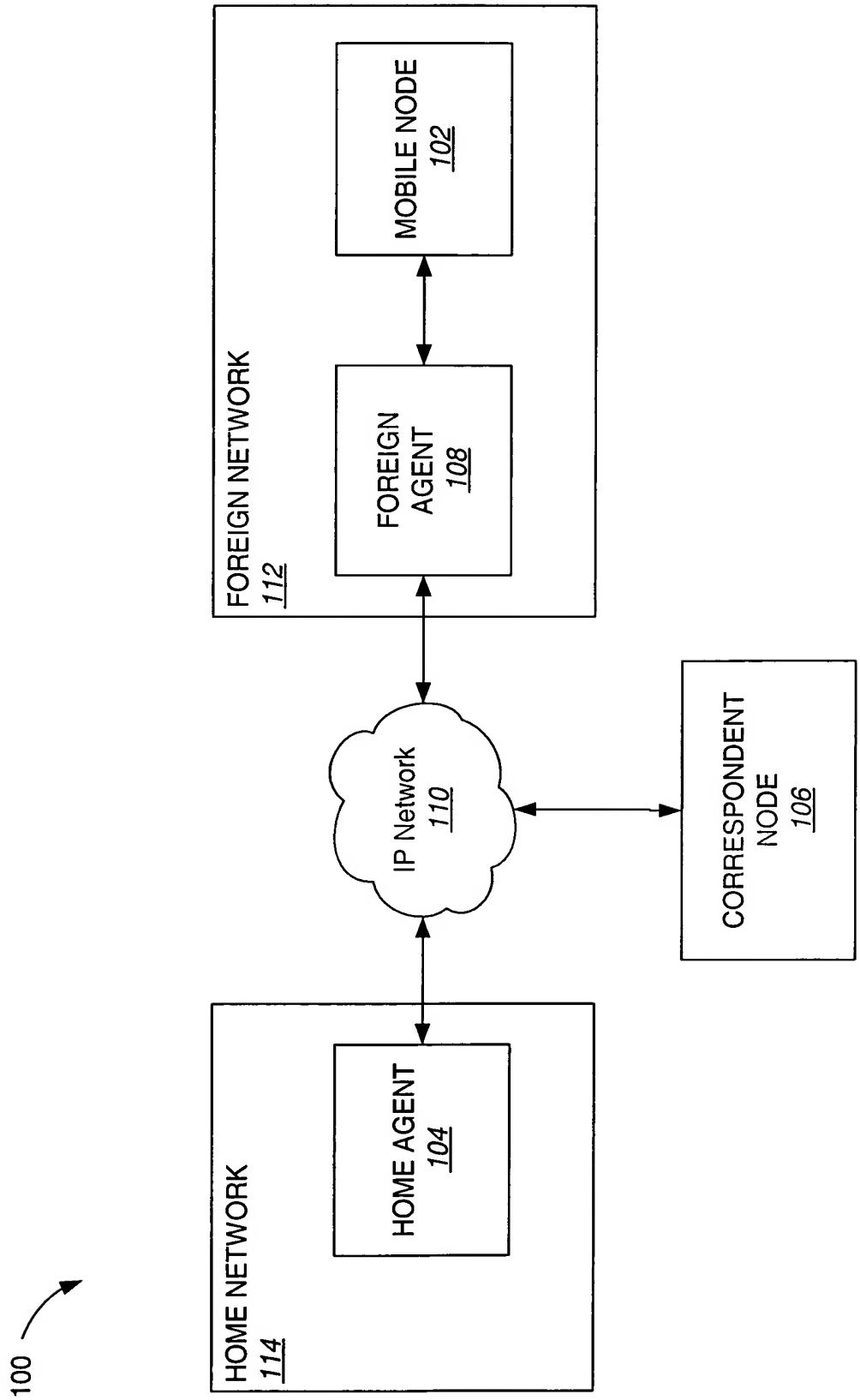



FIG. 1

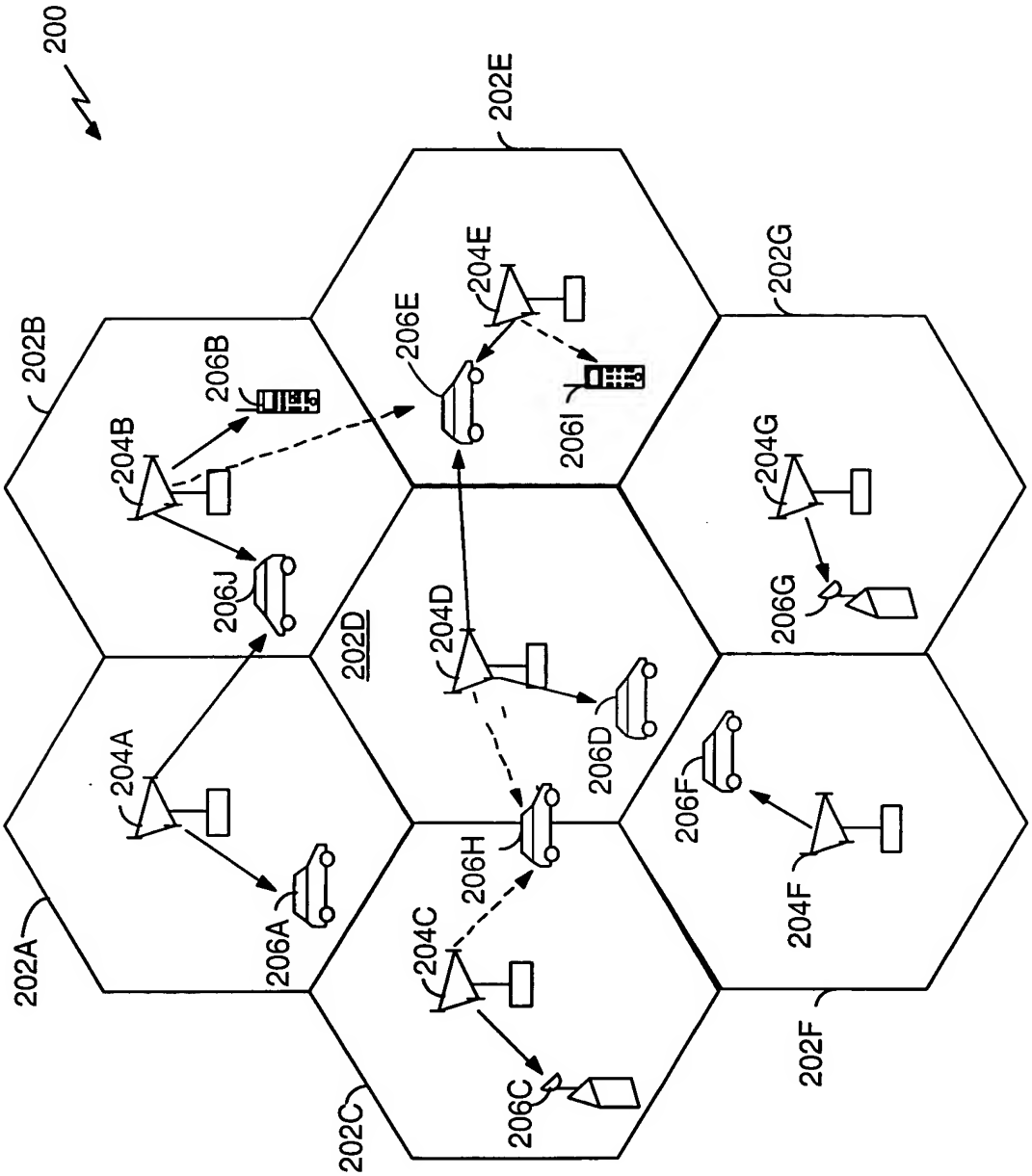

200
202A
202B
202C
202D
202E
202F
202G
204A
204B
204C
204D
204E
204F
204G
206A
206B
206C
206D
206E
206F
206G
206H
206I
206J

FIG. 2

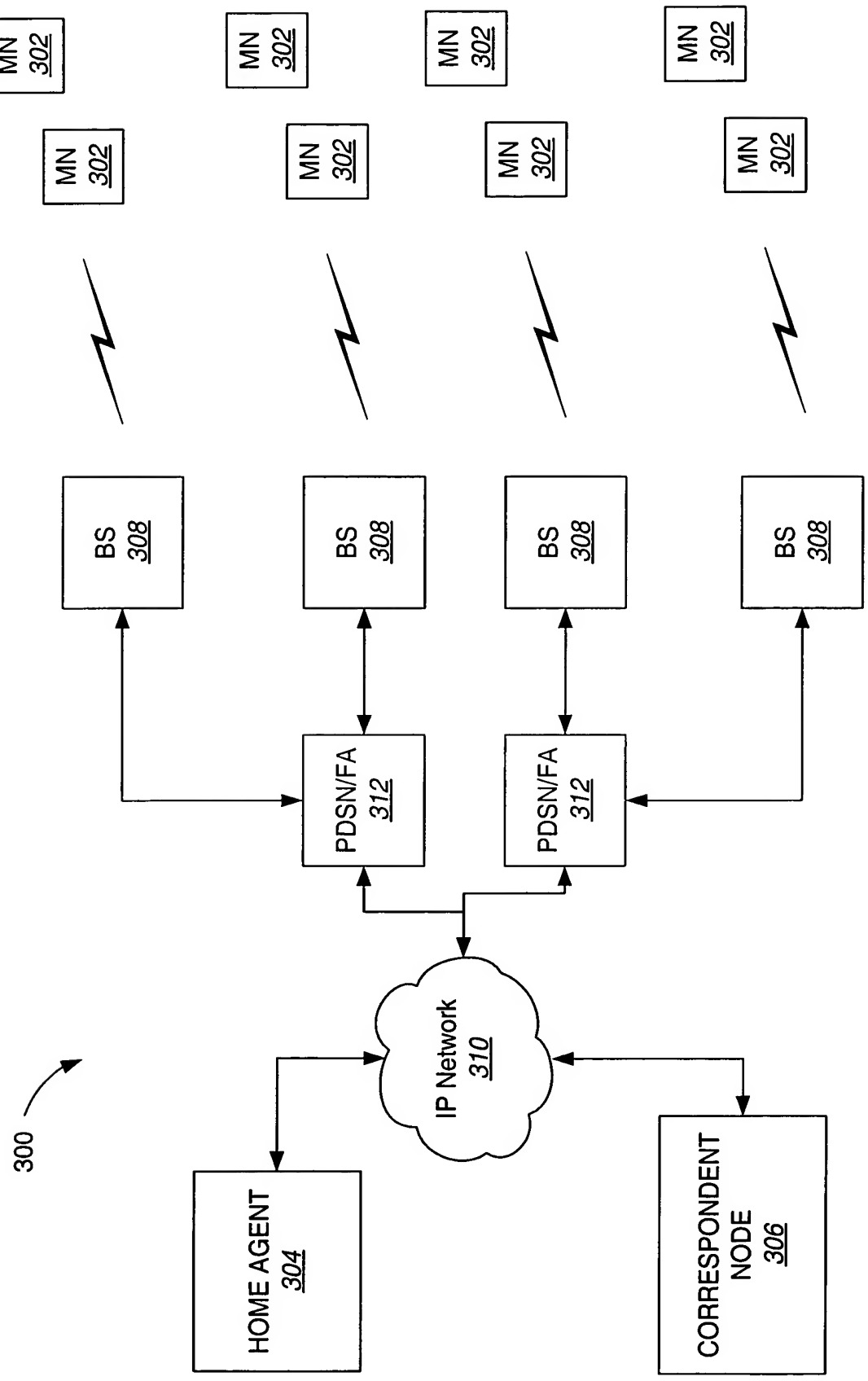

MN 302
MN 302
MN 302
MN 302
MN 302
MN 302
MN 302
MN 302
BS 308
BS 308
BS 308
BS 308
PDSN/FA 312
PDSN/FA 312
IP Network 310
HOME AGENT 304
CORRESPONDENT NODE 306
300

FIG. 3

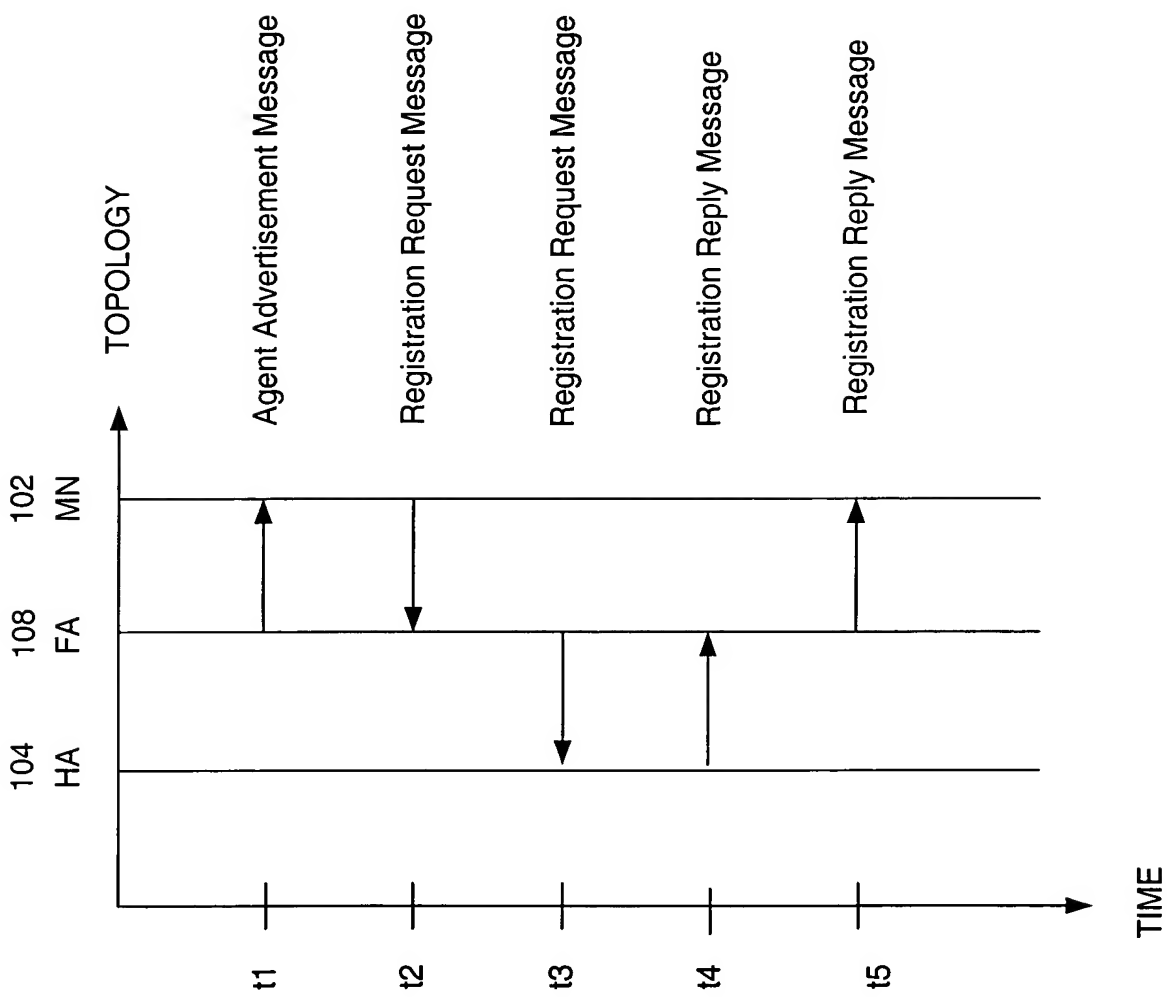

TOPOLOGY
Agent Advertisement Message
Registration Request Message
Registration Request Message
Registration Reply Message
Registration Reply Message
102 MN
108 FA
104 HA
TIME
t1
t2
t3
t4
t5

FIG. 4

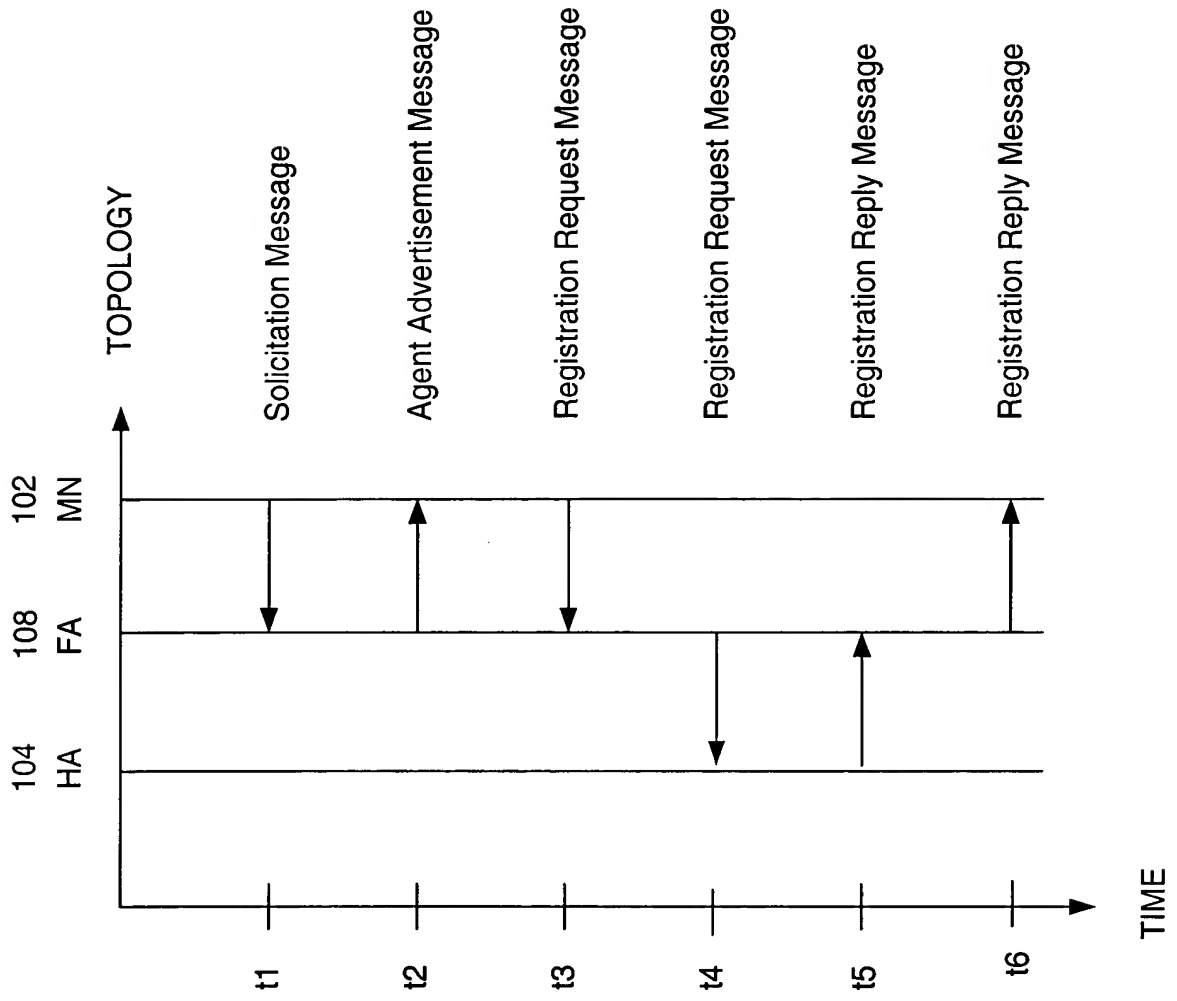

TOPOLOGY
Solicitation Message
Agent Advertisement Message
Registration Request Message
Registration Request Message
Registration Reply Message
Registration Reply Message
102 MN
108 FA
104 HA
t1
t2
t3
t4
t5
t6
TIME

FIG. 5

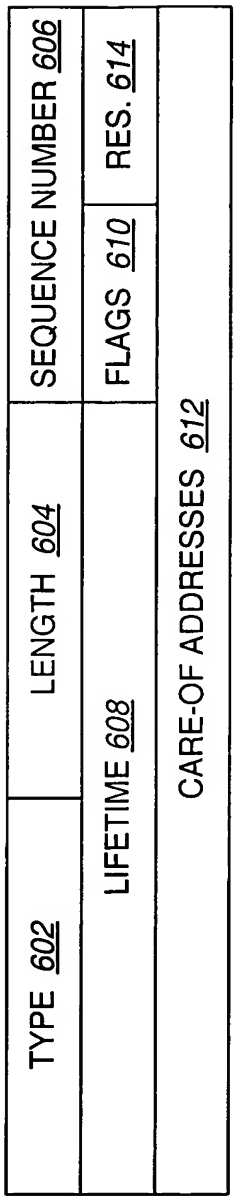

TYPE 602
LENGTH 604
SEQUENCE NUMBER 606
LIFETIME 608
FLAGS 610
RES. 614
CARE-OF ADDRESSES 612

FIG. 6

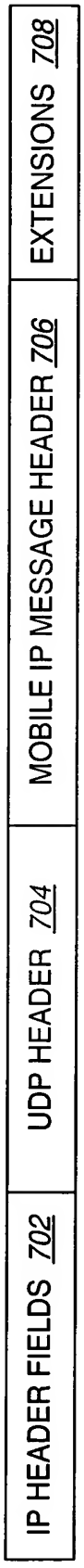

IP HEADER FIELDS 702
UDP HEADER 704
MOBILE IP MESSAGE HEADER 706
EXTENSIONS 708

FIG. 7

FIG. 8

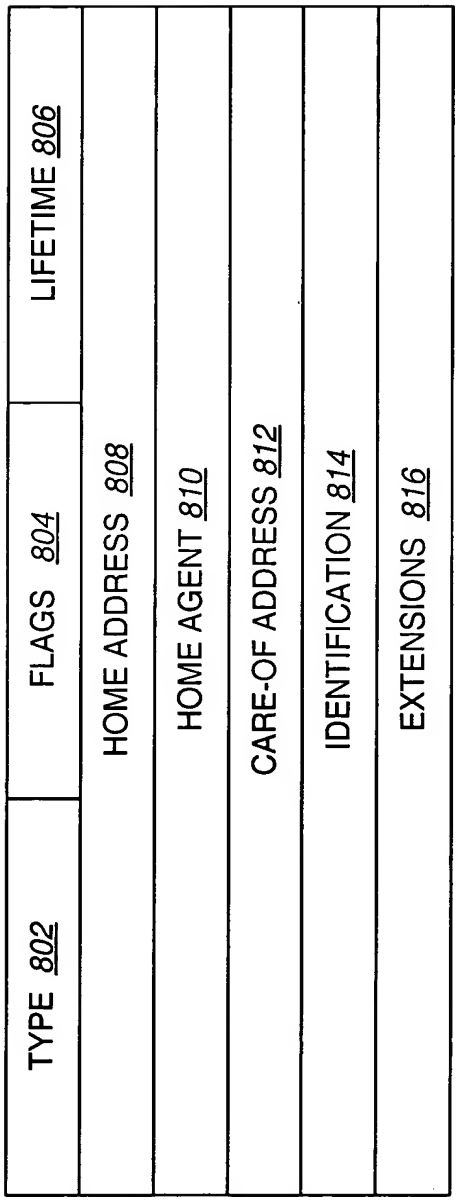
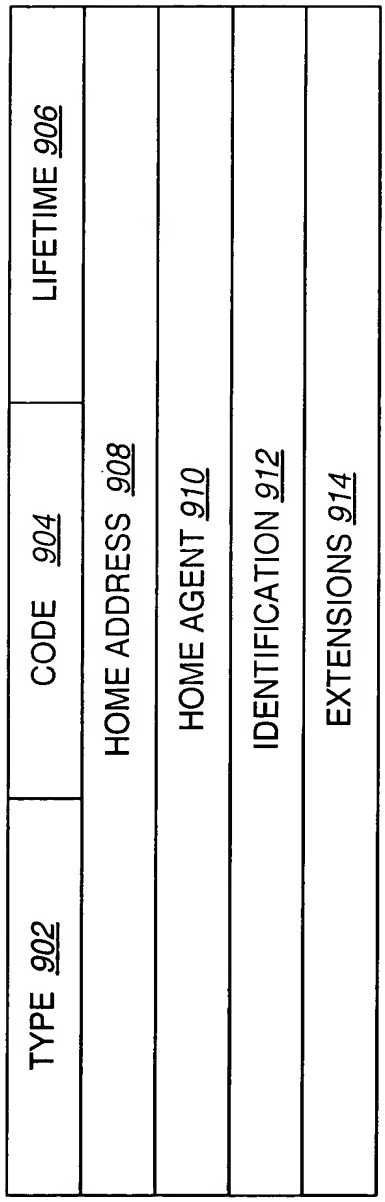

TYPE 802
FLAGS 804
LIFETIME 806
HOME ADDRESS 808
HOME AGENT 810
CARE-OF ADDRESS 812
IDENTIFICATION 814
EXTENSIONS 816

FIG. 9


TYPE 902
CODE 904
LIFETIME 906
HOME ADDRESS 908
HOME AGENT 910
IDENTIFICATION 912
EXTENSIONS 914

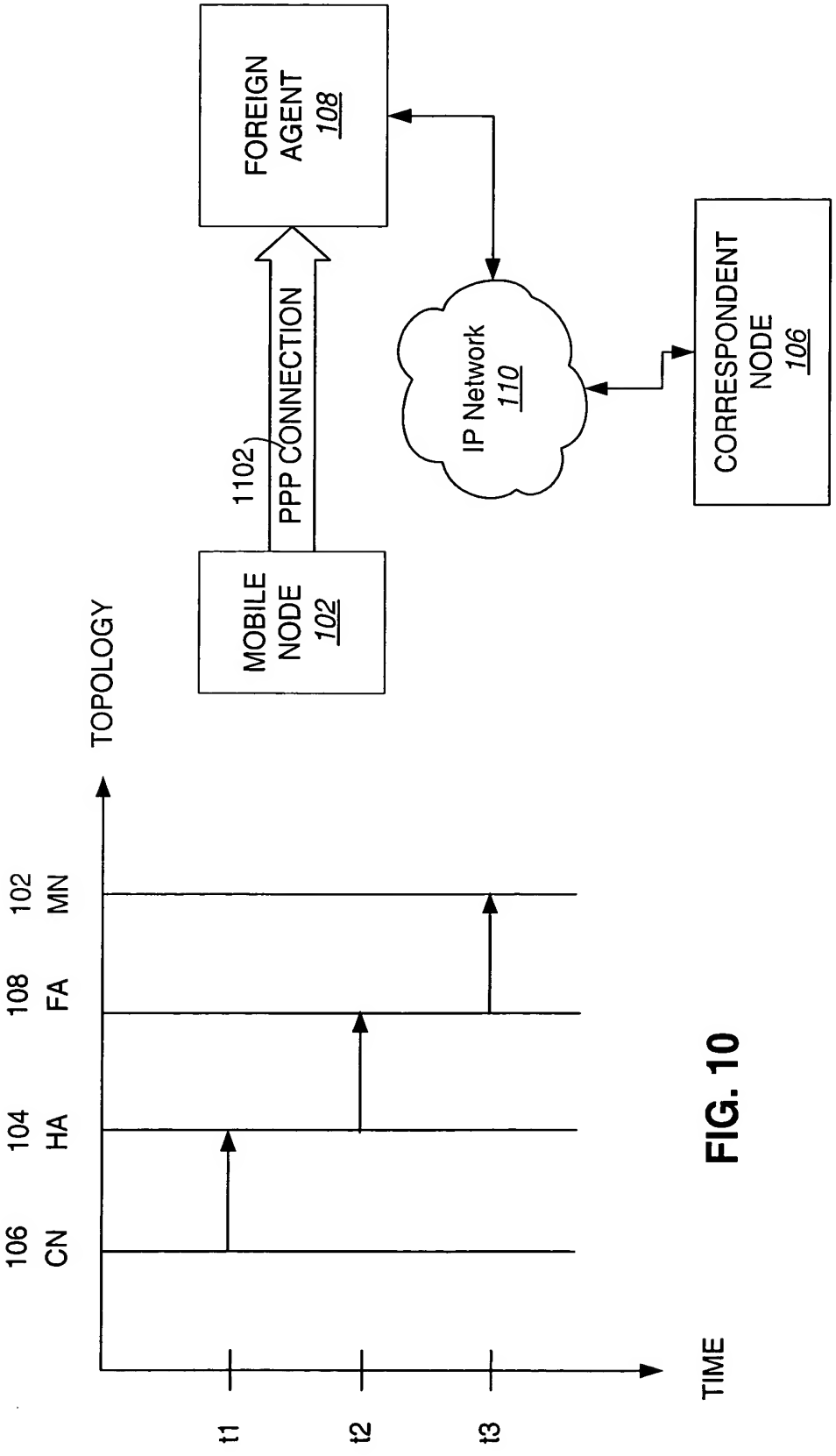

TOPOLOGY
102 MN
108 FA
104 HA
106 CN
t1
t2
t3
TIME

FIG. 10


MOBILE NODE 102
1102
PPP CONNECTION
FOREIGN AGENT 108
IP Network 110
CORRESPONDENT NODE 106

FIG. 11

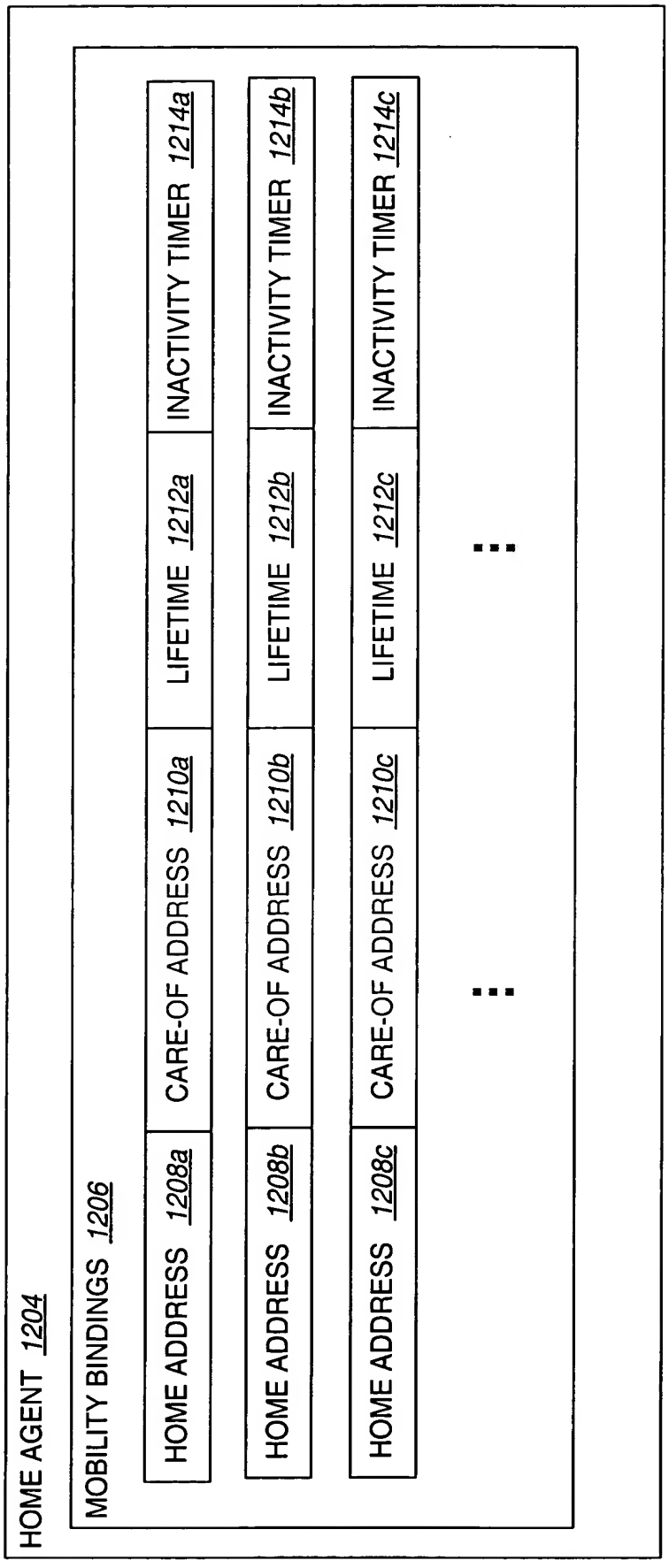

HOME AGENT 1204
MOBILITY BINDINGS 1206
HOME ADDRESS 1208a
CARE-OF ADDRESS 1210a
LIFETIME 1212a
INACTIVITY TIMER 1214a
HOME ADDRESS 1208b
CARE-OF ADDRESS 1210b
LIFETIME 1212b
INACTIVITY TIMER 1214b
HOME ADDRESS 1208c
CARE-OF ADDRESS 1210c
LIFETIME 1212c
INACTIVITY TIMER 1214c

FIG. 12

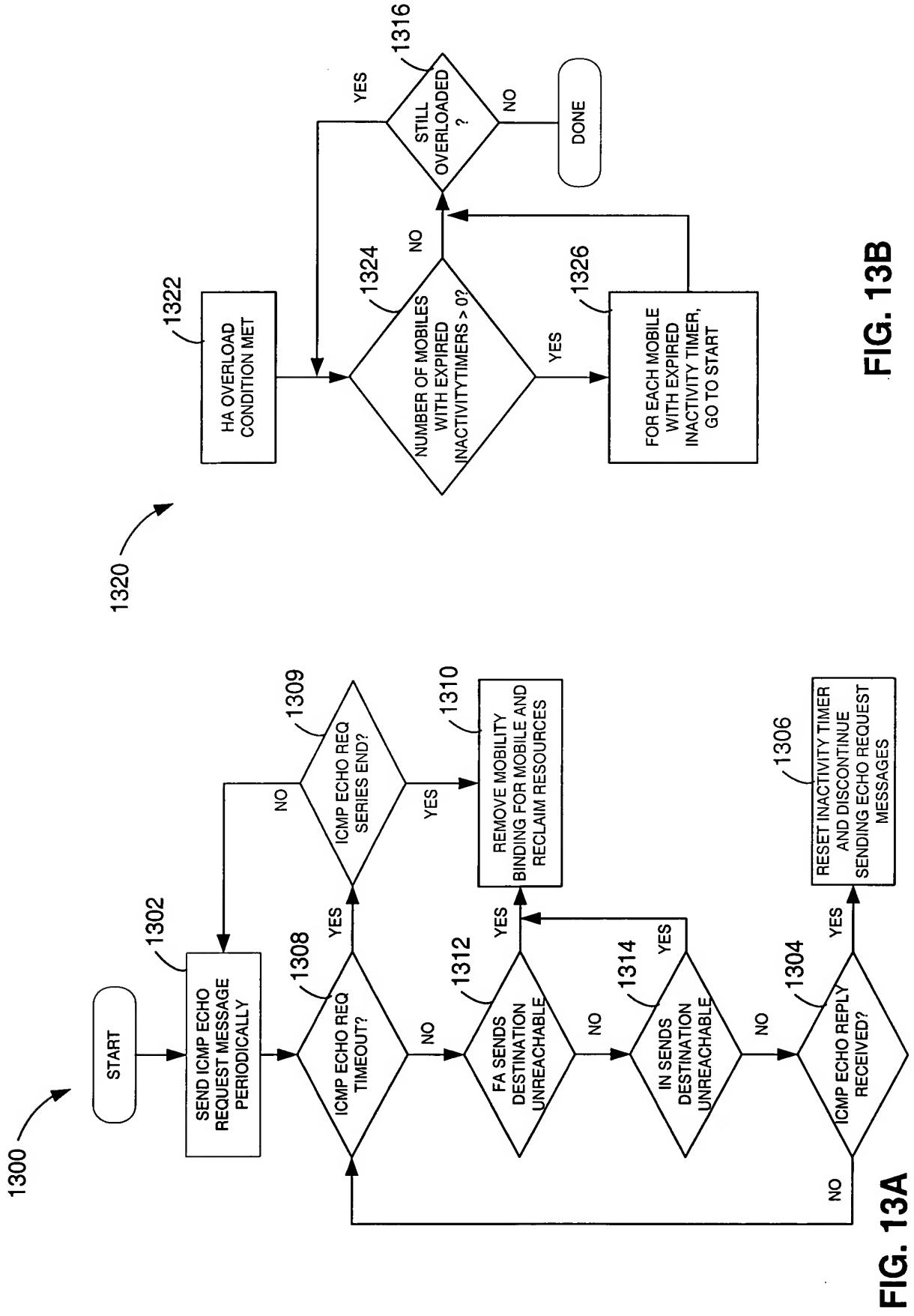



FIG. 13A

FIG. 13B

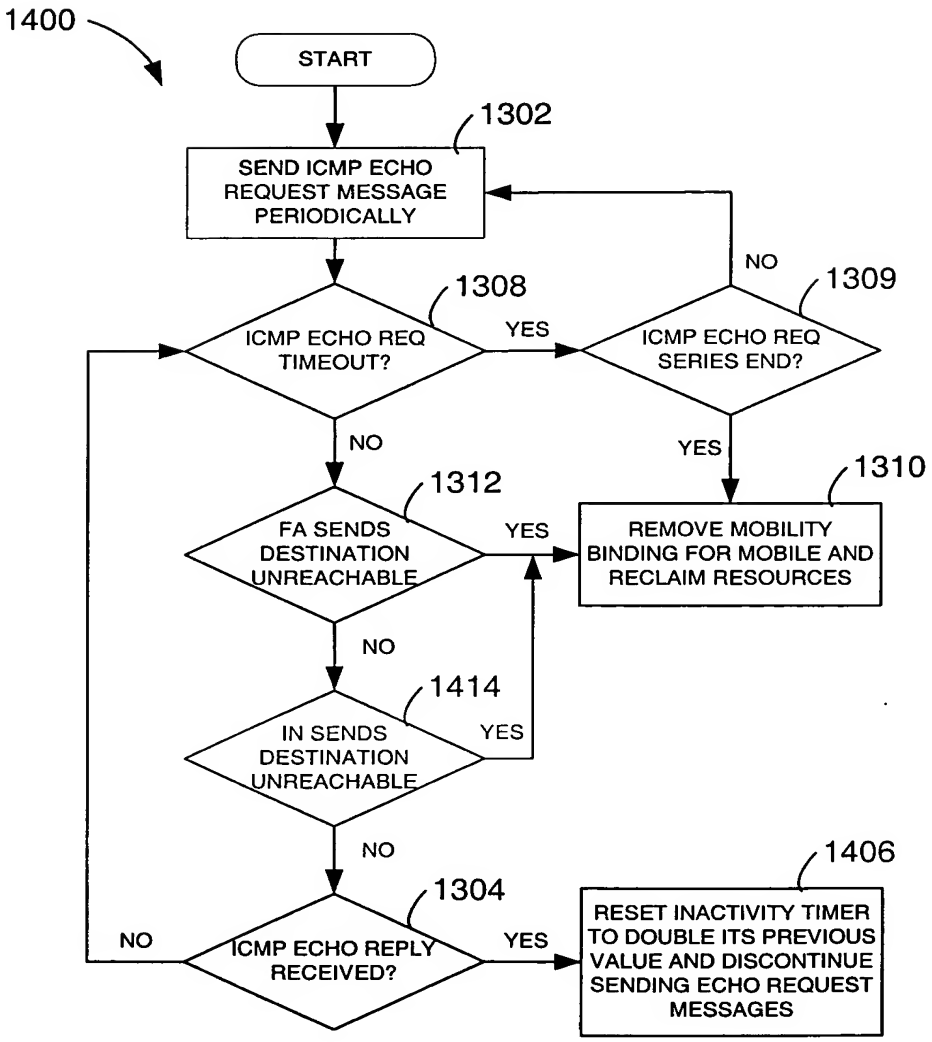

1400
START
1302
SEND ICMP ECHO REQUEST MESSAGE PERIODICALLY
1308
ICMP ECHO REQ TIMEOUT?
YES
1309
ICMP ECHO REQ SERIES END?
NO
NO
YES
1310
REMOVE MOBILITY BINDING FOR MOBILE AND RECLAIM RESOURCES
1312
FA SENDS DESTINATION UNREACHABLE
YES
NO
1414
IN SENDS DESTINATION UNREACHABLE
YES
NO
1406
1304
ICMP ECHO REPLY RECEIVED?
NO
YES
RESET INACTIVITY TIMER TO DOUBLE ITS PREVIOUS VALUE AND DISCONTINUE SENDING ECHO REQUEST MESSAGES

FIG. 14

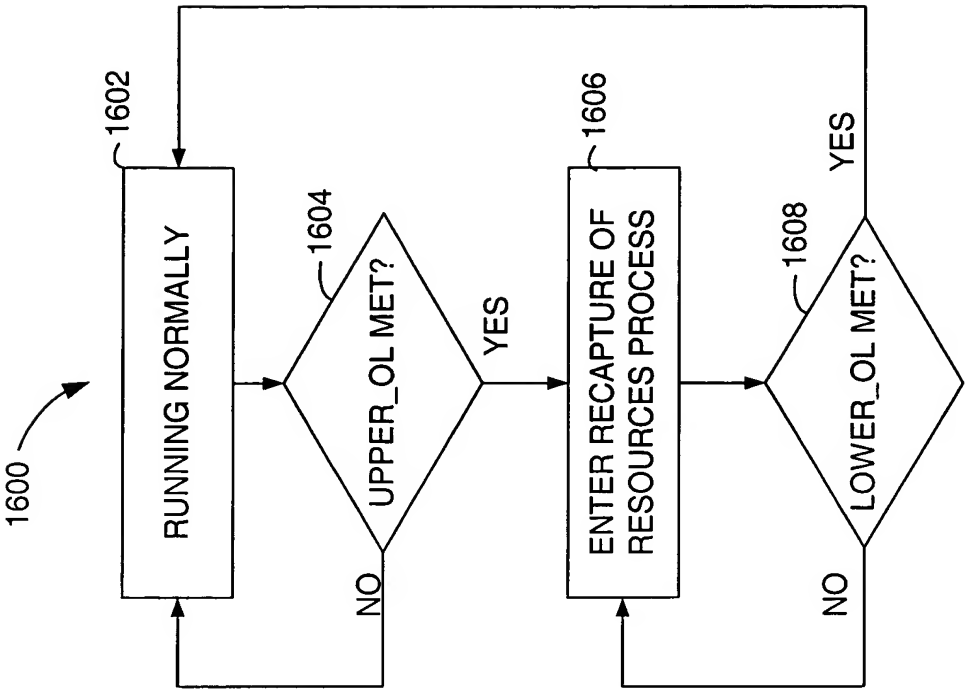

1600
1602
RUNNING NORMALLY
1604
UPPER_OL MET?
YES
NO
1606
ENTER RECAPTURE OF RESOURCES PROCESS
1608
LOWER_OL MET?
YES
NO

FIG. 16

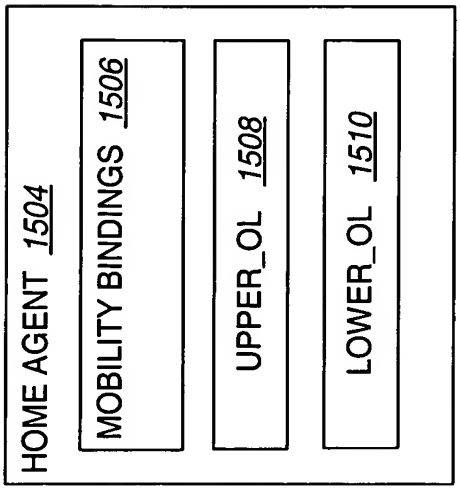

HOME AGENT 1504
MOBILITY BINDINGS 1506
UPPER_OL 1508
LOWER_OL 1510

FIG. 15